

IMPROVEMENTS TO INFORMATION SERVICES IN ASTROLINK. A. E. Zink¹, M. A. Hunter¹, H. C. Buban¹, S. R. Bogle¹, A. D. Dickman¹, U.S. Geological Survey Astrogeology Science Center (2255 N Gemini Drive, Flagstaff, AZ, 86001 (azink@usgs.gov).

Introduction: The AstroLink facility at the USGS Astrogeology Science Center (ASC) in Flagstaff, Arizona serves as a repository, access, and distribution point for planetary data and products, as well as an archive for the ASC and historic mission information. In this role, AstroLink is tasked with preserving the history of planetary science research and exploration while providing useful services and products to assist in the continued exploration of the Solar System. In 2019, AstroLink began efforts to reorganize and expand access to collections and services in accordance with the needs of the planetary science community. While unprecedented work conditions resulting from the COVID-19 pandemic led to a shift in how and when these efforts are executed, our planned work has continued. The following will detail AstroLink's progress over the last year.

Assessing Planetary Science Community Needs:

AstroLink has developed a survey to capture the changing information access and usage needs of the planetary science community [1]. The survey was planned for release and administration at the 51st Lunar and Planetary Science Conference in March of 2020. After the conference cancellation, a decision was made to delay the survey release until 2021 with the hope that the 52nd Lunar and Planetary Science Conference could be held in person. As it became apparent that an in-person conference was not possible, it was decided that the survey will be released in March 2021 to be available through the end of June 2021, and will be promoted through various listservs and planetary meetings throughout that time.

The AstroLink Community Survey covers a range of topics related to planetary information and services, including discovery, preferred formats, and training. Generalized, anonymous results will be made available in an abstract or white paper later this year, including preliminary recommendations to address community needs.

Digitization and Remote Access: While it was already known that the majority of the planetary science community is not easily able to access AstroLink's primarily physical, on-site collections, the indefinite closure of AstroLink to public access as a result of COVID-19 in March of 2020 further underscores the importance of digitizing collections for remote use.

Digitization of documents was prioritized by NASA in 2020, beginning with the development of a standardized digitization procedure. The procedure for

generating the final digitized product of an AstroLink document includes guidelines for scanning parameters (e.g. scanning at 300 dpi), file format and naming conventions, processing of documents for optical character recognition to make them fully searchable, and creation of an XML metadata document with Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata (CSDGM) descriptor fields.

As of December 2020, AstroLink has generated over 300 digitized final products. These final products include ASC internal reports, memorandums, and correspondence primarily dated from 1960 through the early 1980s. Documents range from one to over one hundred pages, and pertain to planetary missions, the geologic mapping of Earth's Moon and Mars, Apollo astronaut training, planetary analog studies, and other planetary research topics.

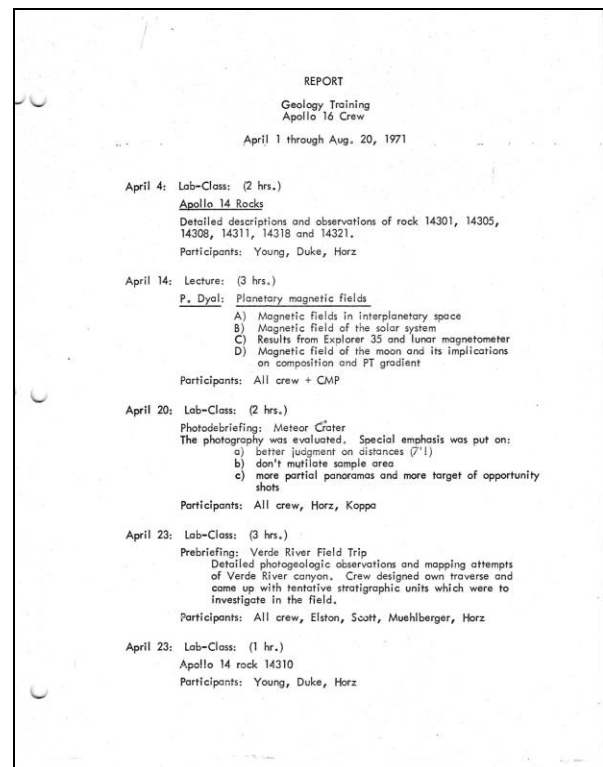


Figure 1. Page one of the Apollo 16 Geology Training Report detailing astronaut training activities, as scanned by AstroLink.

Final products are currently stored on internal servers and are available by request. An online, public-

ly accessible, searchable, and browsable database for scanned products and their metadata is in development. This database will include a catalog of all of AstroLink's collections of documents, photographs, and maps, both digitized and not yet digitized, and will greatly increase AstroLink collections findability and ease of access. Additionally, the entire digitization documentation and publication process will be made available to the public, facilitating archives across the community who wish to digitize their own collections.

On-site Facility Usage: A reorganization of the physical layout within AstroLink has provided additional storage space for collections that have been stored outside of AstroLink due to space constraints. Moving these collections into the AstroLink facility will ensure they are correctly stored with preservation in mind, and will be accessible for cataloging, digitization, and research.

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Figure 2. Excerpt from the XML metadata document for the Apollo 16 Geology Training Report shown in Figure 1.

The USGS Astrogeology Mapping, Remote-sensing, Cartography, Technology, and Research (MRCTR) GIS Lab, formerly located in a different part of the building, has moved into AstroLink, with the goal of offering a designated space for visitors to con-

duct research and receive technical assistance while on-site.

The addition of a conference table and large wall-mounted monitors for meetings and/or viewing large products such as maps allows AstroLink to further provide a useful physical space to researchers.



Figure 3. Photograph showing a portion of the new AstroLink layout including archival documents and photographs shelving (left), folded map cabinets (right), and a conference table (center right).

Moving into the Future: Efforts to improve the usability of AstroLink and its materials have resulted in changes to both the digital and physical handling and arrangement of collections. These future works include sharing of best practices for data managers, advanced visualization tools, and advocacy for the planetary science community in archive and data standards organizations. Details of this work are subject to change in order to best meet the recommendations put forth by the NASA Planetary Data Ecosystem (PDE), currently in development. Prospective users or partners are encouraged to contact the authors with questions or recommendations for future work.

References: [1] Zink, A. E. et al. (2020) *LPSC LI*, Abstract #2597.